

## WHAT IS CLAIMED IS:

1. A method for avoiding objects along a path programmed into a robot comprising the following steps in the order named:
  - (a) establishing a field of view for an electronic imager of said robot along said path,
  - 5 (b) obtaining object location information in said field of view,
  - (c) deriving a population coded control signal from said object location information, and
  - (d) transmitting said control signal to said robot, thereby allowing said robot to avoid said object.
2. The method of Claim 1 where deriving said population coded control signal comprises the following steps in the order named:
  - (a) processing a population coded motion energy algorithm that decomposes a video stream of said object location information into spatial and temporal frequency components,
  - 5 (b) processing a population coded velocity algorithm that recombines said spatial and temporal frequency components corresponding to said object and provides a velocity output, thereby identifying how said object is moving in said field of view,
  - (c) processing a population coded rotation algorithm that determines if said electronic imager is turning and provides a turning information output,

15 (d) processing a population coded translation algorithm that transforms  
said velocity output of said velocity algorithm into a speed signal and  
calculates a distance between said object and said electronic imager  
providing a strategic control vector and a tactical control vector, and  
(e) processing a population coded navigation algorithm where said  
strategic control vector, said tactical control vector, and said turning  
information output are used to derive said population coded control  
signal.

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3. A method for deriving a distance from an object to an electronic imager comprising the following steps in the order named:

5 (a) establishing a field of view for said electronic imager,  
(b) obtaining object location information in said field of view,  
(c) deriving said distance from said object to said electronic imager by  
processing a population coded set of algorithms.

4. The method of claim 3 where processing said population coded set of  
algorithms comprises the following steps in the order named:

5 (a) processing a population coded motion energy algorithm that  
decomposes a video stream of said object location information into  
spatial and temporal frequency components,  
(b) processing a population coded velocity algorithm that recombines  
said spatial and temporal frequency components corresponding to  
said object and provides a velocity output, thereby identifying how  
said object is moving in said field of view, and

10 (c) processing a population coded translation algorithm that transforms  
said velocity output of said velocity algorithm into a speed signal and  
calculates said distance between said object and said electronic  
imager.